

**Subject: glowbugs V1 #145**  
**glowbugs**

**Tuesday, October 28 1997**

**Volume 01 : Number 145**

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Date: Mon, 27 Oct 1997 07:33:32 -0400  
From: "Brian Carling" <bry@mnsinc.com>  
Subject: CCF radio

OK, has anyone here had a chance to look at this yet?

I've added a few graphics etc. now and made it nicer.

I'll keep improving it too - Bry

<http://www.mnsinc.com/bry/ham/ccfradio.htm>

On 25 Oct 97 at 11:29, Brian wrote:

> Did anyone here get a chance to read tha article about CCF Radio  
> which used WW2 military BA rigs back in the 60s ??  
>  
> It makes for great reading!

<http://www.mnsinc.com/bry/ham/ccfradio.htm>

> Let me know what you think!  
>

> Bry, AF4K

\*\*\*\*\*  
\*\*\* 73 from Radio AF4K/G3XLQ Gaithersburg, MD USA \*  
\*\* E-mail to: bry@mnsinc.com \*  
\*\*\* ICQ: 3910641 \*\*\*  
\*\* <http://www.mnsinc.com/bry/> \*  
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AM International #1024, TENTEN #13582. GRID FM19. Using a SWAN 250 on 6m,  
Other rigs: Valiant, DX-60/HG-10, FT-840, TM-261, Ameco TX-62, Gonset Communicator III  
HTX-202...TEN-TEN #13582, DXCC #17,763 Bicentennial WAS

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Date: Mon, 27 Oct 1997 07:33:33 -0400  
From: "Brian Carling" <bry@mnsinc.com>  
Subject: Re: Wednesday Night Activity

Kevin, the 6BM8 ought to do just fine.

Have you tried it EARLIER in the evenings?

You may do better like that, or in the daytime on weekends for  
shorter distances.

Want a schedule some time so I can hear that little monster here in  
MD?

Bry

On 26 Oct 97 at 19:51, Kevin wrote:

> Sorry to Hear about old Grandma Hartly. Even though the frequency was

> jumping around it si the best sounding power oscilator I have ever heard.  
> Also I know that people are runing a little low in freq which really is a  
> problem for my rig. My home breg Glowbug rig uses a sharp collins  
> mechanical filter and I use the rx to monitor my sending so that If I tune  
> folks low in frequency I can't hear my own sending. Guess I need a side  
> tone monitor for it. I fired up the 6BM8 rig and it is putting out over 10  
> watts however with the QRN I am not haveing much luck I did manage to  
> work WB9HFK with the 10 watts. I put a computer style 3.58 in an old  
> bliley xtal holder for a period looking xtal.  
>  
> I really like the 6BM8 xmitter but fear that I need more power.  
>  
> Well I hear and am trying to work W5FRS and I don't think that he hears me  
> verry well so should get back to the RX.  
>  
>  
> Kevin Pease  
> WB0JZG  
> Mount Juliet, TN.  
>  
>  
>  
\*\*\*\*\*  
\*\*\* 73 from Radio AF4K/G3XLQ Gaithersburg, MD USA \*  
\*\* E-mail to: bry@mnsinc.com \*  
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AM International #1024, TENTEN #13582. GRID FM19. Using a SWAN 250 on 6m,  
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HTX-202...TEN-TEN #13582, DXCC #17,763 Bicentennial WAS

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Date: Mon, 27 Oct 1997 08:49:16 -0500 (EST)  
**From:** rdkeys@csemail.cropsci.ncsu.edu  
**Subject:** Re: Which one?

>  
> Well I am back. Been a little under for a while. In getting all my parts  
> together for the regen I am a little behind. I have started looking for  
> parts for the Hartley and was wondering. I have the following available.  
> 24A, 45, 6v6, 6au6, 6bk7 and others. Will any of these work in a Hartley  
> circuit. If so and you might know of a circuit please help.

The 45 is the classic Hartley tube. See the George Grammer 1932 article  
in the Glowbugs archives. Be gentle with it and it should get you 5  
watts input. Pushing it beyond that may be problematic.

The 24A is the classic regen detector tube. If you had a '27 to go along  
with it you would be all set.

> Oh by the way I did find some neat sockets for the 30's in the Sonora. I  
> found 2 of the CRV-49311A's and one CMH-49311A. Fascinating looking, these  
> are made of a fiber insulator suspended between two brackets lined with  
> felt.

The CRV sockets are RCA and are Navy stock items. Were they in the box  
or on some piece or separate? They should be ideal for your receiver.  
I am not sure who made the CMH socket, offhand, but someone would know.

Bob/NA4G

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Date: Mon, 27 Oct 1997 09:27:58 -0500 (EST)  
From: rdkeys@csemail.cropsci.ncsu.edu  
Subject: Re: Hartleys again - about done ---- EXCELLENT!

> Well, yesterday I threw together a "real" power supply. Found a 900VCT  
> 250ma xfmr (with fil windings) and a UTC 6HY choke. So made the classic  
> pi filter job using a pair of 20uf 600V Aerovox caps. I put the choke in  
> the negative lead. Worked fine except after a half hour, Pssssssssss.....  
> One of the caps let go. Well, key-up, the voltage hovered around 580V  
> so no surprise I guess. Replaced both of them with a pair of 16uF at 700V  
> and all is well.

500-600 volts is a good pleasant power supply for a Hartley. I get a tad  
on the timid side if it goes up much higher than that on an open set.

What is it with caps these days.... those things seem to go right and left.  
When I can, I try to use standard non-electrolytic caps. They are bigger,  
and heavier, but less prone to Pssssssssstitis with age. I tend to find  
them floating to the bilges of boxes under hamfest tables. The generic  
1000 volters at 8 or 10 ufd are fine. Grapples 'em up, next time ye  
sees them around hamfests.....(:+)}.....

> What I ended up doing was putting a voltage divider across the output  
> consisting of 20K and 15K in series (20W each). The tap between them  
> is ground. So, the negative lead goes to the grid resistor of the Hartley.  
> I have a mercury relay that shorts the 15K resistor out on key-down.  
> In this way, I have grid-block keying (-270V key-up). The supply sits  
> at 640V total output key up and drops to about 540 key down.

A classic way to key using grid blocking. I did a quick read of my 1928  
Handbook last weekend, and it did show a grid blocking keying method, but  
for some reason they were not much in favor of it because of the key being  
up from rf ground. What you have seems to be the same as on the BC-191  
BC-375 BC-223 style rigs. That should work fine.

270 volts to ground, key up..... yup, relay time, for sure. That mercury  
relay should be good at most any QRQ.

> The Hartley itself stayed pretty much the same. I tried various coil taps  
> and various grid resistors and wound up with the tap at 3 1/2 turns from  
> the grid end, and a grid resistor of about 4K. With the pair of 3C24's  
> I get roughly 41 watts input, 18 watts out = 43% efficiency. Grid current  
> is 22ma, grid voltage is -100V (developed by the RF). Tuning range is  
> 3525 to 3600KC. Observation on the spec analyzer showed the 2nd harmonic  
> to be -38dB. Key clicks looked like at least -50. (I'll have to get an  
> off-the-air report from a friend across town).

WOW! 41 watts input on a Hartley..... big time boomer fer sure!  
Congratulations!

With 22 ma grid current, that would suggest and confirm the OT's suggestions  
of using a grid resistor rated the same as the power of the set. It would  
not suffer from heating problems, then. What size grid leak and wattage  
are you using, and what grid cap, once again?

Second Harmonic at -38db.... GREAT! See folks, one can make a Hartley  
run in accordance with the latest technical standards, and laugh all the

way to the bank. All it takes is a little proper fiddlin'.

> One thing I noticed is that backing off the link coupling resulted in a  
> bit less drift with the key down. One problem with backing off the  
> coupling is that the grid current increases noticeably, which is normal.  
> So I urge any of you building a Hartley to monitor your grid current.  
> It's as important as the plate current (maybe more if you don't want to  
> blow the tube).

The old timers used to say that you needed to load out the self controlled oscillators to get them calmed down. Your findings would seem to confirm that. There is a point beyond which loading it up causes drift and other sorts of problems. Conversely, there is a point of insufficient loading that runs the efficiency way down. I tend to shoot for about 33% as the best load point. I would be curious to find out what you find as the best loading point into a real antenna. At about 43% loadout efficiency, that is well loaded. You might test the grid current and relative output loading and see what a plot of that looks like. If I load up Grandma Hartley to full power (about 50%), she gets very drifty and tends to a hum modulation note. Backing off a bit settles her down. At full power, I get 7 watts output, and at 5-6 watts output, she purrs along nicely. Last time I measured her input, it was around 18 watts. In her case that is around 1/3 loadout efficiency. The old books suggest that the max obtainable is 50%, but don't seem to give a general point to shoot for, other than ``tune for the best output note''. When I load out Grandma Hartley, I find that the antenna system needs to be tuned a little BELOW the fundamental working frequency (increased series capacitance) by a little bit to give the most stable note. When you get yours running into the antenna, let us know what works best for you, and what kind of antenna system you are using. I always use a 1/4 wave end fed antenna against a 1/4 wave counterpoise on Hartleys for a generic low impedance feed.

> Hope to have it on the air for a trial this week. I am sure using the  
> copper tubing tank and good caps really pays off. I have had a worse time  
> trying to make a stable VFO using FET's!

Gee, aren't Hartleys FUN! Who said this OT Junque was trash. You just have to learn how to tame the beasts! (Forgotten Knowledge of the Ancients!)

See folks, Hartleys DO work, and work WELL!

Kudos to Bob on his new sending set!

73/ZUT DE NA4G UP

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Date: Mon, 27 Oct 1997 10:00:56 -0500 (EST)  
From: [rdkeys@csemail.cropsci.ncsu.edu](mailto:rdkeys@csemail.cropsci.ncsu.edu)  
Subject: Grandma Hartley rides again!

Well, I got home from the gristmill last nite, about 0200Z, and fired up ol' Grandma Hartley, ta dittle a round on the ol BA QRG, but I could only work Mike/VE3FGU, up in Canada. I did hear a few others, but they were all quite weak in the mud. Better times are coming, I am sure as winter socks us in. Mebbie tonite!

73/ZUT DE NA4G/Bob UP

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Date: Mon, 27 Oct 1997 10:31:53 -0600 (CST)  
From: Bob Roehrig <broehrig@admin.aurora.edu>  
Subject: Re: Hartleys again - about done ---- EXCELLENT!

On Mon, 27 Oct 1997 rdkeys@csemail.cropsci.ncsu.edu wrote:

> 500-600 volts is a good pleasant power supply for a Hartley. I get a tad  
> on the timid side if it goes up much higher than that on an open set.

Well, this is indeed an open set, built on a 15 inch square piece of wood, although the front panel is metal. But this set will be on a high shelf where it normally can't be reached.

> A classic way to key using grid blocking. I did a quick read of my 1928  
> Handbook last weekend, and it did show a grid blocking keying method, but  
> for some reason they were not much in favor of it because of the key being  
> up from rf ground. What you have seems to be the same as on the BC-191  
> BC-375 BC-223 style rigs. That should work fine.

To solve the "RF on the grid (bias) lead" problem, I have a standard 2.5mh RF choke off the grid circuit with the DC feed end bypassed to ground with .005uf. The grid resistor is after that so is "cold" RF-wise.

> With 22 ma grid current, that would suggest and confirm the OT's suggestions  
> of using a grid resistor rated the same as the power of the set. It would  
> not suffer from heating problems, then. What size grid leak and wattage  
> are you using, and what grid cap, once again?

The grid resistor is 4.2K at 6 watts (a combination of three 2-watters). Both the grid and plate coupling caps are Centralab transmitting doorknobs rated at 500pf at 5KV.

A word of caution here: DO NOT USE TV type DOORKNOBS! These were used to filter the 2nd anode DC in older TV sets and are only good for bypass purposes. When used in a circuit with RF, such as in a tank, or for coupling, they drift like crazy.

> The old timers used to say that you needed to load out the self controlled  
> oscillators to get them calmed down. Your findings would seem to confirm  
> that. There is a point beyond which loading it up causes drift and other  
> sorts of problems. Conversely, there is a point of insufficient loading  
> that runs the efficiency way down. I tend to shoot for about 33% as the  
> best load point. I would be curious to find out what you find as the  
> best loading point into a real antenna.

Ross's article recommends backing off the coupling about 40% from max output. That may be a little extreme, especially in light of what happens to the grid current. The ideal coupling for this rig seems to be a 3 turn link 3 inches dia (same as the tank) spaced about 1 inch from the tank. By swinging the link away from or towards the tank, I get a peak output at about 1 inch spacing. With 1 or 2 turns, I could not get a peak - the output kept rising even as the link was touching the tank, indicating not enough turns.

I still have to run some drift tests at various coupling values. At max coupling, drift from key-down to several minutes later, when it is stable, runs anywhere from 30 to 100 Hz, depending what part of the band I am in. Backing off the coupling may well improve that.

Then I will try the antenna(s). One is an approx 5/8 wave end fed and the other is a coax fed half sloper.

UFO's are real! (It's the Air Force that does not exist)  
E-mail broehrig@admin.aurora.edu 73 de Bob, K9EUI  
CIS: Data / Telecom Aurora University, Aurora, IL  
630-844-4898 Fax 630-844-5530

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Date: Mon, 27 Oct 1997 17:49:44 +0200  
**From:** "JOSE V. GAVILA (EB5AGV/EC5AAU)" <eb5agv@ctv.es>  
**Subject:** 6AG5 projects?

Hello!

First than anything else, I want to briefly introduce myself, as I am a newcomer to this list. My name is JOSE V. GAVILA and I'm from Valencia (Spain). Main interests here are ham radio and boatanchors (as a visit to my WEB page, address below, will show you), and I would like to experiment a bit with homebrew tube circuits.

Well, some time ago there was an offering of NIB 6AG5 tubes in the Net at \$.10 each. I'm sure some of you bought some... BTW, I bought 200 units. Well, I wonder if, apart of the '20 6AG5 amplifier' depicted in the ER magazine, there are any other interesting projects with this tube.

Any hint would be welcomed!.

Thanks and best regards.

JOSE

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73 EB5AGV / EC5AAU  
JOSE V. GAVILA  
Ausias March 46, 15  
46910 Benetusser - VALENCIA  
SPAIN

<http://www.geocities.com/SiliconValley/6992/>  
e-mail: eb5agv@ctv.es & eb5agv@amsat.org

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Date: Mon, 27 Oct 1997 09:24:02 -0800  
**From:** "Frank A. West" <ke6vhm@earthlink.net>  
**Subject:** Re: Which one?

Thanks Bob,

The sockets were separate. But only one has been used before. No damage just a little piece of wire on the terminals.

5 watts doesn't seem like much for all that voltage. HIHI. My QRP silly sand rig does that on 9V. This tube stuff is a real challenge for someone like me. What a learning curve.

I have down loaded the GG files and will check them out.  
Tnx again.

TTFN 73 Frank KE6VHM  
Grid Square DM13  
CW Forever

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> From: rdkeys@csemail.cropsci.ncsu.edu

> To: ke6vhm@earthlink.net  
> Cc: glowbugs@www.atl.org  
> Subject: Re: Which one?  
> Date: Monday, October 27, 1997 5:49 AM  
>  
> >  
> > Well I am back. Been a little under for a while. In getting all my  
parts  
> > together for the regen I am a little behind. I have started looking  
for  
> > parts for the Hartley and was wondering. I have the following  
available.  
> > 24A, 45, 6v6, 6au6, 6bk7 and others. Will any of these work in a  
Hartley  
> > circuit. If so and you might know of a circuit please help.  
>  
> The 45 is the classic Hartley tube. See the George Grammer 1932 article  
> in the Glowbugs archives. Be gentle with it and it should get you 5  
> watts input. Pushing it beyond that may be problematic.  
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> The 24A is the classic regen detector tube. If you had a '27 to go along  
> with it you would be all set.  
>  
> > Oh by the way I did find some neat sockets for the 30's in the Sonora.  
I  
> > found 2 of the CRV-49311A's and one CMH-49311A. Fascinating looking,  
these  
> > are made of a fiber insulator suspended between two brackets lined with  
> > felt.  
>  
> The CRV sockets are RCA and are Navy stock items. Were they in the box  
> or on some piece or separate? They should be ideal for your receiver.  
> I am not sure who made the CMH socket, offhand, but someone would know.  
>  
> Bob/NA4G  
>

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Date: Mon, 27 Oct 1997 15:12:47 -0500  
From: bgriff@develcon.com (Bill Griffith)  
Subject: Regen Rx

Hello all ! Just wanted to share my regen rx experiences to date.

I haven't had the free time that I'd hoped for to complete my 6K7/6K7/6V6 rig, so I decided to build a less ambitious "proof-of-concept" rig using one half of a 12AU7 (I also tried a 12AT7, but it didn't work as well - do all med-mu triodes work better as regen detectors than hi-mu ?). All the parts came from my junk-box. The coil is wound on a 1-1/4" dia polystyrene pill-bottle. Main tuning condenser is the oscillator-gang section of a bcb-radio var. cond., with a 25pf fine-tuning cond. and 100pf throttle cond. Tuning range was adjusted using silver-mica caps in series and parallel to cover roughly 3300 to 4300kcs (still needs adjusting). I'm using an old TV speaker xfmr to couple the audio to my W/S No. 19 headphones (about 100ohms Z, I think). B+ is only 20 volts, and the performance is amazing - stability is very good, CW and SSB can be heard fine with only a light 'rub' of the fine-tuning cap required every 5-10mins to adjust tone. The regeneration control is smooth and quiet. Next I want to wire up the other triode as an audio amp, and I will probably tidy this rig up and make it a keeper. This rig is FUN to operate.

Regarding VA2MD's beacon - with very few exceptions, I've found the members of this fine hobby to be friendly, helpful, courteous, and proud of their technical and operating skills. Mr. Dussault is no exception - he holds three calls, by the way, and (at least) two other members of his family are also hams. Personally, I think 3579kcs is an unfortunate choice of QRG for low-power communications - the heterodyne moan of all the colour TV's in my neighbourhood swamp all but the strongest signals (and I switched off all the breakers in the house except the one to my shack - it was time to change the clocks anyway). I've only been able to make out a CW signal twice in the past three weeks on this freq while monitoring with my R-390A. Wouldn't it be better to leave this QRG to the experimenters and choose a quieter one ? Just a thought ...

73 all,  
Bill VE3WGX

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Date: Mon, 27 Oct 1997 14:16:45 -0800 (PST)  
**From:** Ken Gordon <keng@uidaho.edu>  
**Subject:** Re: Regen Rx

> Wouldn't it be better to leave this QRG to the experimenters and choose a  
> quieter one ? Just a thought ...

YEAH!!!!!!!!!!!!!!

Ken W7EKB

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Date: Tue, 28 Oct 1997 06:38:49 +0100  
**From:** "Giovanni Mazzola" <it9xxs@exit.it>  
**Subject:** Re: Regen Rx

Ciao Bill !

I just did a receiver like your and I'll be glad to see the schematic, if possible.

You can find mine at my url <http://www.qsl.net/it9xxs> (slowly under construction).

I added too a power amplifier with a 6AQ5 (EL90) tetrode and it is quite loud.

Please keep in touch.

73's.

Giovanni, it9xxs@exit.it

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Date: Tue, 28 Oct 1997 01:44:41 -0500 (EST)  
**From:** N8ti@aol.com  
**Subject:** noise on 3.579.5



For the last three weeks, whenever I turn to 3.579.5 I get a carrier at an S-9 level. It is the same, day or night, when everyone is asleep or awake. I am in Livonia, Michigan, about 15 miles from downtown Detroit. Does anyone have any idea why I am subject to this, besides not living a good clean life?

73 de Joe N8TI

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Date: Tue, 28 Oct 1997 09:49:57 +0100  
From: Jan Axing <janax@algonet.se>  
Subject: Re: noise on 3.579.5

N8ti@aol.com wrote:

>  
> For the last three weeks, whenever I turn to 3.579.5 I get a carrier at an  
> S-9 level. It is the same, day or night, when everyone is asleep or awake.  
> I am in Livonia, Michigan, about 15 miles from downtown Detroit.  
> Does anyone have any idea why I am subject to this, besides not living a good  
> clean life?  
>  
> 73 de Joe N8TI

Perhaps the source is more local than you think. The 3579.5 rock is often used in microprocessor controlled gear often found in modern homes today. I have found two in my own house, one in the heating system and one in the satellite receiver. Colour burst here is 4433.618 so TV's are not a problem here.

Greetings from an unusually cold Sweden.  
Jan, SM5GNN

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Date: Tue, 28 Oct 1997 06:37:28 -0700  
From: Dean Norris <dnorris@k7no.com>  
Subject: Re: noise on 3.579.5

At 01:44 10/28/1997 -0500, you wrote:

>For the last three weeks, whenever I turn to 3.579.5 I get a carrier at an  
>S-9 level. It is the same, day or night, when everyone is asleep or awake.  
>I am in Livonia, Michigan, about 15 miles from downtown Detroit.  
>Does anyone have any idea why I am subject to this, besides not living a good  
>clean life?  
>  
>73 de Joe N8TI

The reason those xtals are so cheap is that they are made in large quantities to supply the TV industry. You see, they are used as the xtal for ALL tv color burst oscillators. Therefore, every color tv set has one of these little puppies merrily giggling along at 3.5795 mHz. You are hearing the collective voices of every color tv in your neighborhood.

gl and keep on tubing.

C. Dean Norris, K7NO  
e-mail to dnorris@k7no.com  
I can only please one person a day, and today ain't your day.

Tomorrow don't look too good for you either!

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End of glowbugs V1 #145  
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